Board Of Intermediate & Secondary Education, HYDERABAD, SINDH.

Secondary School Certificate Part – II Annual Examination 2011

Annual Examination 2011	MATH	HYDERABAD BOARD

Time: 15 Minutes M. Marks: 15

Note: (1) Attempt all the questions. Each questions carries ONE mark.
(2) Do not copy down the part questions in your answer book.
Write only the answer in full against the proper number of the Question and its part, and MCQs question paper must be attached with answer book.
(3) The Code of your question paper must be mentioned in bold letters in the answer book.

Section-A
Multiple Choice Question (MCQs)

NOTE: Choose the correct answer for each from the given options:

(i) $\frac{1}{P}$ - P is a .... expression.
 (a) Polynomial (b) Rational (c) irrational (d) None of these

(ii) The logarithm of the base to itself is ....
 (a) 0 (b) 1 (c) 10 (d) None of these

(iii) If $(x^3 - x^2 - 226x + 1410) \div (x + 17)$ then the reminder is ....
 (a) O (b) 20 (c) 40 (d) 50

(iv) If the number of rows of matrix A is equal to the number of columns then A is called .... matrix.
 (a) Rectangular (b) Column (c) Square (d) None of these

(v) If $A = \begin{bmatrix} 3 & 2 \\ 5 & 4 \end{bmatrix}$, then | the reminder is ....
 (a) 2 (b) 3 (c) 4 (d) None of these

(vi) The sum of 10 observations is 125, the mean is............
 (a) 15 (b) 75 (c) 50 (d) None of these

(vii) The solution set of $\sqrt{y} - 2 = -4$ is ....
 (a) 18 (b) ± 4 (c) { } (d) None of these

(viii) The solution set of $|3x| = 6$ is.................
 (a) {2} (b) { -2} (c) {-2 , 2} (d) None of these

(ix) The measure of an angle inscribed in a semi – circle is equal to...........
 (a) 90° (b) 180° (c) 120° (d) None of these

(x) Every line contains at least........... distinct points.
 (a) 2 (b) 3 (c) 4 (d) None of these

(xi) Cartesian product of sets A and B is written as:
 (a) A.B (b) AxB (c) A∆B (d) BxA

(xii) (-3 , -2) is in .... quadrant.
 (a) Second (b) Third (c) Fourth (d) None of these

(xiii) Product of a conjugate pair of binomial surds is a .... number.
 (a) Real (b) Even (c) Rational (d) Odd

(xiv) The degree of the polynomial $x + y + xy^2$ is............
 (a) 2 (b) 3 (c) 4 (d) 0

(xv) The natural logarithm has the base.............
 (a) π (b) 10 (c) e (d) 1

(xvi) An angle with measure less than 90° is called ....
 (a) Right Angle (b) Acute Angle (c) Obtuse Angle (d) None of these

(xvii) A triangle having two sides congruent is called............
 (a) Scalene triangle (b) Isosceles triangle
 (c) Equilateral triangle (d) None of these

(xviii) The sub duplicate of 4:9 is ....
 (a) 2:3 (b) 16:81 (c) 8:18 (d) None of these

(xix) A circle which passes through three vertices of a triangle is called the .... of the triangle.
 (a) Escribed circle (b) Circum circle (c) Inscribed circle (d) None of these

(xx) Cosec 40° = ...
 (a) Sin 40° (b) Sec 40° (c) Sec 50° (d) Sin 50°

TIME ALLOWED: 2:40 MINUTES MARKS: 60

SECTION – B

NOTE: Answer Any TEN of the Following Questions. All Quistions Carry Equal Marks. 36

Q.No:2 If (x + y, 2) = (4, x – y), then find x and y.

Q.No:3 Simplify the following:

(a) $4^{32} \div 4^{23}$ (b) $\sqrt[3]{\frac{34a^3b^9}{216\, c^6 d^{18}}}$

Q.No:4 Find the value of $\log_8 128$

Q.No:5 Find the value of x-y when x+y = 7 and xy = 10

Q.No:6 Simplify: $\frac{4}{a^2 - 4a - 5} + \frac{8}{a^2 - 1}$

Q.No:7 Factorize any two of the following:
(a) $x^2 + 15x + 36$ (b) $a^8 + a^4 + 1$ (c) $x^2(y - z) + y^2(z - x) + z^2(x-y)$

Q.No:8 Define any two of the following and draw the figures.
(a) Opposite Rays (b) Supplementary Angles
(c) Vertically Opposite Angles

Q.No:9 Find the solution set of any one of the following:
(a) $|5y - 3| - 6 = 3$ (b) $\sqrt{25y-6} = 4\sqrt{y+3}$

Q.No:10 Eliminate "a" From the equations, a + = x and a - 1 = y

Q.No:11 Find the mean proportional between 14 a 56

Q.No:12 Find the arithmetic mean when D = x – 20, $\sum fD = 300$ and $\sum f = 20$

Q.No:13 The two tangents, drawn to a circle from a point outside it, are equal in length. Prove it.

Q.No:14 Construct an inscribed circle of a triangle ABC in which.
$m\overline{AB} = 4.5$ cm, $m\overline{BC} = 5$cm and $m\angle B = 60^\circ$

Q.No:15 Prove that : $\frac{1}{1+\sin\alpha} + \frac{1}{1-\sin\alpha} = 2\sec^2\alpha$

SECTION – C

NOTE: Answer Any THREE of the Following Questions. All Quistions Carry Equal Marks. 30

Q.No:16 Find the H.C.F of $6x^3 + 24x^2 + 6x - 36$ and $4x^3 - 8x^2 - 20x + 24$ by factor method.

Q.No:17 If $A = \begin{bmatrix} 1 & 3 \\ 2 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 2 \\ 0 & -1 \end{bmatrix}$ and $C = \begin{bmatrix} 0 & 3 \\ 1 & 5 \end{bmatrix}$, then Prove that A (B – C) = AB – AC

Q.No:18 (a) The right bisectors of the sides of a triangle are concurrent. Proe it.
(b) The sum of the lengths of any two sides of a triangle is greater than the length of the third side. Prove. It.

Q.No:19 (a) Find the solution set of $2x^2 + 21 = 13x$ by factorization.
(b) Find the solution set of $3(y^2 - 1) - 4(y + 1) = 0$ using quadratic formula.

Q.No:20 (a) Find all the values of trigonometric ratios of 30°.
(b) The foot of tower is at a distance of 20m from a point on the ground. The angle of elevation of the top of the tower from this point is of 60°. Find the height of the tower.